

*
FILE 'USPAT' ENTERED AT 14:31:19 ON 17 DEC 1998

*
* W E L C O M E T O T H E *
* U. S. P A T E N T T E X T F I L E *
* *

=> s 435/4,6.7.1,7.2/ccls

1488 435/4/CCLS
0 435/6.7.1/CCLS
599 435/7.2/CCLS
L1 2029 435/4,6.7.1,7.2/CCLS
((435/4 OR 435/6.7.1 OR 435/7.2)/CCLS)

=> s 435/6,7.1/ccls

4238 435/6/CCLS
1627 435/7.1/CCLS
L2 5464 435/6,7.1/CCLS
((435/6 OR 435/7.1)/CCLS)

=> s 436/172,518/ccls

945 436/172/CCLS
1855 436/518/CCLS
L3 2716 436/172,518/CCLS
((436/172 OR 436/518)/CCLS)

=> s 422/52,58,61,98,102/ccls

263 422/52/CCLS
1277 422/58/CCLS
1071 422/61/CCLS
647 422/98/CCLS
1513 422/102/CCLS
L4 4034 422/52,58,61,98,102/CCLS
((422/52 OR 422/58 OR 422/61 OR 422/98 OR 422/102)/CCLS)

=> s electrochemiluminescen## or ECL

123 ELECTROCHEMILUMINESCEN##
4455 ECL
L5 4523 ELECTROCHEMILUMINESCEN## OR ECL

=> s (11 or 12 or 13 or 14) and 15

L6 237 (L1 OR L2 OR L3 OR L4) AND L5

=> s cassette# or kit#

38430 CASSETTE#
32502 KIT#
L7 69082 CASSETTE# OR KIT#

=> s 16 and 17

L8 163 L6 AND L7

=> s 18 and electrode#
215934 ELECTRODE#
L9 23 L8 AND ELECTRODE#

=> s 18 and (counter electrode#)
259229 COUNTER
215934 ELECTRODE#
6346 COUNTER ELECTRODE#
(COUNTER (W) ELECTRODE#)
L10 11 L8 AND (COUNTER ELECTRODE#)

=> s 19 and l11
'L11' NOT FOUND

=> s 19 and l10
L11 11 L9 AND L10

=> d l11 1-11

1. 5,846,485, Dec. 8, 1998, **Electrochemiluminescent** reaction utilizing amine-derived reductant; Jonathan Kent Leland, et al., **422/52**; **436/84**, 172, 800 [IMAGE AVAILABLE]

2. 5,811,236, Sep. 22, 1998, **Electrochemiluminescent** rhenium moieties and methods for their use; Richard J. Massey, et al., **435/6**, 5, 7.1, 7.2, 7.9, 252.1; **436/500**, 537, 548; **514/2**; **530/387.2**; **536/24.3**, 45, 46, 49; **546/2** [IMAGE AVAILABLE]

3. 5,779,976, Jul. 14, 1998, Apparatus for improved luminescence assays; Jonathan K. Leland, et al., **422/52**, 82.05; **436/172** [IMAGE AVAILABLE]

4. 5,770,459, Jun. 23, 1998, Methods and apparatus for improved luminescence assays using particle concentration, electrochemical generation of chemiluminescence detection; Richard J. Massey, et al., **436/526**; **435/7.1**; **436/518**, 524, 527, 528, 531, 532, 533, 534, 537 [IMAGE AVAILABLE]

5. 5,746,974, May 5, 1998, Apparatus for improved luminescence assays using particle concentration, electrochemical generation of chemiluminescence and chemiluminescence detection; Richard J. Massey, et al., **422/52**, 82.05; **436/172** [IMAGE AVAILABLE]

6. 5,716,781, Feb. 10, 1998, Method of calibration of an **electrochemiluminescent** assay system; Richard J. Massey, et al., **435/6**, 4, 5, 7.1, 7.2, 810; **436/63**, 501; **536/24.3**, 24.31, 24.32, 26.6 [IMAGE AVAILABLE]

7. 5,705,402, Jan. 6, 1998, Method and apparatus for magnetic microparticulate based luminescence assay including plurality of magnets; Jonathan K. Leland, et al., **436/526**, 518, 524, 536, 537 [IMAGE AVAILABLE]

8. 5,679,519, Oct. 21, 1997, Multi-label complex for enhanced sensitivity in **electrochemiluminescence** assay; John J. Oprandy, **435/6**; **252/515**; **435/5**, 7.1, 7.9, 91.2; **536/24.3**, 24.32, 24.33, 26.6 [IMAGE AVAILABLE]

9. 5,641,623, Jun. 24, 1997, **Electrochemiluminescence** assay; Mark T.

Martin, 435/4; 424/1.69; 435/7.1, 7.2, 7.32, 7.72, 18, 29, 34, 39; 549/34 [IMAGE AVAILABLE]

10. 5,591,581, Jan. 7, 1997, **Electrochemiluminescent** rhenium moieties and methods for their use; Richard J. Massey, et al., 435/6, 5, 7.2, 235.1, 325, 410; 436/537; 530/350, 400; 546/2; 556/45, 46, 49 [IMAGE AVAILABLE]

11. 5,541,113, Jul. 30, 1996, Method for detecting an analyte using an electrochemical luminescent transition metal label; Iqbal W. Siddigi, et al., 436/56; 422/52, 82.05, 82.06, 82.08; 436/164, 172 [IMAGE AVAILABLE]

=> d 111 1-11 ab

US PAT NO: 5,846,485 [IMAGE AVAILABLE]

L11: 1 of 11

ABSTRACT:

A composition suitable for use in an **ECL** assay wherein electromagnetic radiation emitted by said composition is detected, which composition comprises (a) a metal-containing **ECL** moiety which, when oxidized by exposure to an effective amount of electrochemical energy, is capable of being converted to an excited state from which electromagnetic radiation is emitted upon exposure of the excited **ECL** moiety to conditions sufficient to induce said emission; (b) an amine or amine moiety which, when oxidized by exposure to an effective amount of electrochemical energy, forms a strong reducing agent in said composition; and (c) an electrolyte capable of functioning as a medium in which said **ECL** moiety and said amine or amine moiety can be oxidized by exposure to electrochemical energy.

US PAT NO: 5,811,236 [IMAGE AVAILABLE]

L11: 2 of 11

ABSTRACT:

Electrochemiluminiscent moieties having the formula

[Re(P).sub.m (L.sup.1).sub.n (L.sup.2).sub.o (L.sup.3).sub.p (L.sup.4).sub.q (L.sup.5).sub.r (L.sup.6).sub.s].sub.t (B).sub.u
wherein

P is a polydentate ligand of Re;

L.sup.1, L.sup.2, L.sup.3, L.sup.4, L.sup.5 and L.sup.6 are ligands of Re, each of which may be the same as or different from each other ligand;

B is a substance which is a ligand of Re or is conjugated to one or more of P, L.sup.1, L.sup.2, L.sup.3, L.sup.4, L.sup.5 or L.sup.6;

m is an integer equal to or greater than 1;

each of n, o, p, q, r and s is zero or an integer;

t is an integer equal to or greater than 1; and

u is an integer equal to or greater than 1;

P, L.sup.1, L.sup.2, L.sup.3, L.sup.4, L.sup.5, L.sup.6 and B being of such composition and number that the chemical moiety can be induced to emit electromagnetic radiation and the total number of bonds to Re provided by the ligands of Re being equal to the coordination of Re are disclosed.

Qualitative and quantitative **electrochemiluminescent** assays for analytes of interest present in multicomponent liquids using these moieties are disclosed. These methods comprise contacting a sample with a reagent labeled with an **electrochemiluminescent** chemical moiety containing rhenium and capable of combining with the analyte of interest, exposing the resulting sample to chemical, electrochemical, or electromagnetic energy and detecting electromagnetic radiation emitted by the **electrochemiluminescent** chemical moiety.

US PAT NO: 5,779,976 [IMAGE AVAILABLE]

L11: 3 of 11

ABSTRACT:

An apparatus for performing a binding assay for an analyte of interest present in a sample based upon measurement of **electrochemiluminescence** at an **electrode** surface comprising a cell defining a sample containing volume intersecting with inlet and outlet means, an **electrode** having a substantially horizontally positioned surface exposed to and positioned below a portion of the sample containing volume, means for impressing electrochemical energy upon said **electrode** sufficient to generate luminescence, means for magnetically collecting particles along said surface and means for measuring the luminescence generated at said **electrode**.

US PAT NO: 5,770,459 [IMAGE AVAILABLE]

L11: 4 of 11

ABSTRACT:

What is described are methods and apparatus for performing a binding assay for an analyte of interest present in a sample. The methods include the steps of: forming a composition containing said sample, an assay-performance-substance which contains a component linked to a label compound capable of chemiluminescing when triggered, and a plurality of coated magnetic particles capable of specifically binding with the analyte and/or said assay-performance-substance; incubating said composition to form a complex which includes a particle and said labeled component; magnetically collecting said complex at the surface of an **electrode**; inducing said label to luminesce by contacting it with a trigger, said trigger being formed in-situ by conversion of a precursor molecule upon introduction of electrochemical energy; and measuring the emitted luminescence to measure the presence of the analyte of interest in the sample.

US PAT NO: 5,746,974 [IMAGE AVAILABLE]

L11: 5 of 11

ABSTRACT:

What is described are methods and apparatus for performing a binding assay for an analyte of interest present in a sample. The methods include the steps of: forming a composition containing said sample, an assay-performance-substance which contains a component linked to a label compound capable of chemiluminescing when triggered, and a plurality of coated magnetic particles capable of specifically binding with the analyte and/or said assay-performance-substance; incubating said composition to form a complex which includes a particle and said labeled component; magnetically collecting said complex at the surface of an **electrode**; inducing said label to luminesce by contacting it with a trigger, said trigger being formed in-situ by conversion of a precursor molecule upon introduction of electrochemical energy; and measuring the emitted luminescence to measure the presence of the analyte of interest in the sample.

US PAT NO: 5,716,781 [IMAGE AVAILABLE]

L11: 6 of 11

ABSTRACT:

Electrochemiluminiscent moieties having the formula

[$\text{Re}(\text{P})\text{.sub.}m$ ($\text{L}.\text{sup.}1$). $\text{sub.}n$ ($\text{L}.\text{sup.}2$). $\text{sub.}o$ ($\text{L}.\text{sup.}3$). $\text{sub.}p$ ($\text{L}.\text{sup.}4$). $\text{sub.}q$ ($\text{L}.\text{sup.}5$). $\text{sub.}r$ ($\text{L}.\text{sup.}6$). $\text{sub.}s$]. $\text{sub.}t$ (B). $\text{sub.}u$

wherein

P is a polydentate ligand of Re ;

$\text{L}.\text{sup.}1$, $\text{L}.\text{sup.}2$, $\text{L}.\text{sup.}3$, $\text{L}.\text{sup.}4$, $\text{L}.\text{sup.}5$ and $\text{L}.\text{sup.}6$ are ligands of Re , each of which may be the same as or different from each other ligand;

B is a substance which is a ligand of Re or is conjugated to one or more of P , $\text{L}.\text{sup.}1$, $\text{L}.\text{sup.}2$, $\text{L}.\text{sup.}3$, $\text{L}.\text{sup.}4$, $\text{L}.\text{sup.}5$ or $\text{L}.\text{sup.}6$;

m is an integer equal to or greater than 1;

each of n , o , p , q , r and s is zero or an integer;

t is an integer equal to or greater than 1; and
u is an integer equal to or greater than 1;
P, L.sup.1, L.sup.2, L.sup.3, L.sup.4, L.sup.5, L.sup.6 and B being of
such composition and number that the chemical moiety can be induced to
emit electromagnetic radiation and the total number of bonds to Re
provided by the ligands of Re being equal to the coordination of Re
are disclosed.

Qualitative and quantitative **electrochemiluminescent** assays for
analytes of interest present in multicomponent liquids using these
moieties are disclosed. These methods comprise contacting a sample with a
reagent labeled with an **electrochemiluminescent** chemical moiety
containing rhenium and capable of combining with the analyte of interest,
exposing the resulting sample to chemical, electrochemical, or
electromagnetic energy and detecting electromagnetic radiation emitted by
the **electrochemiluminescent** chemical moiety.

US PAT NO: 5,705,402 [IMAGE AVAILABLE]

L11: 7 of 11

ABSTRACT:

Disclosed and claimed are methods and apparatus for performing a binding
assay for an analyte of interest present in a sample based upon
measurement of **electrochemiluminescence** at an **electrode**. The
method uses magnetically responsive particles. The method and apparatus
call for a plurality of electromagnets or permanent magnets in
north-south orientation for imposing a magnetic field so as to collect
the particles.

US PAT NO: 5,679,519 [IMAGE AVAILABLE]

L11: 8 of 11

ABSTRACT:

A nucleotide probe complex which enhances the ability to discriminate low
level samples in **electrochemiluminescent** assays. The complex is
composed of a platform molecule to which multiple copies of an
organometallic **electrochemiluminescent** label and an oligonucleotide
probe are separately attached. Preferably the complex is capped with
streptavidin. Use of the complex permits detection of 1000 copies of
analyte per sample in less than one hour.

US PAT NO: 5,641,623 [IMAGE AVAILABLE]

L11: 9 of 11

ABSTRACT:

A rapid single step assay suitable for the detection or quantification of
.beta.-lactam antibiotics and .beta.-lactamases. The assay can be
performed directly on samples of food, such as milk and meat, blood or
serum and is useful in determining the suitability of a particular
antibiotic in treating a particular bacterial infection and in diagnosis
of a bacterial infection. The assay is also useful in determining and
quantifying .beta.-lactam antibiotic resistance. The assay can be
performed on an IGEN Origen.sup.R Analyzer.

US PAT NO: 5,591,581 [IMAGE AVAILABLE]

L11: 10 of 11

ABSTRACT:

Electrochemiluminescent moieties having the formula

(Re(P).sub.m (L.sup.1).sub.n (L.sup.2).sub.o (L.sup.3).sub.p
(L.sup.4).sub.t (B).sub.u

wherein

P is a polydentate ligand of Re;

L.sup.1, L.sup.2, L.sup.3 and L.sup.4 are ligands of Re, each of which
may be the same as or not the same as each other ligand;

B is a substance which is a ligand of Re or is conjugated to one or more
of P, L.sup.1, L.sup.2, L.sup.3 and L.sup.4;

m is an integer equal to or greater than 1;

each of n, o, p, q, r and s is zero or an integer;

- t is an integer equal to or greater than 1; and u is an integer equal to or greater than 1;
- P, L^{sup.1}, L^{sup.2}, L^{sup.3}, L^{sup.4} and B being of such composition and number that the chemical moiety can be induced to electrochemiluminesce and the total number of bonds to Re provided by the ligands of Re being equal to the coordination number of Re are disclosed.

Qualitative and quantitative **electrochemiluminescent** assays for analytes of interest present in multicomponent liquids using these moieties are also disclosed.

US PAT NO: 5,541,113 [IMAGE AVAILABLE]

L11: 11 of 11

ABSTRACT:

A method for detecting an analyte, in an aqueous solution at a physiological pH, by reductive or oxidative/reductive electrochemical luminescence methodologies is disclosed. The method proceeds by labelling the analyte with a transition metal complex, followed by inducing the transition metal label to luminescence by application of a suitable electrical potential to a solution containing the label and the analyte. The transition metal complex can be a tris-ruthenium(bipyridine) complex. A hydroxylamine and/or a halogen-containing moiety can be used to enhance both reductive and/or oxidative electrochemical luminescence of the transition metal complex. The transition metal chelate can be used as a label for the detection of picomolar concentrations of an analyte of interest, such as an analyte present in a sample of a physiological fluid.